

at least two receiving devices (6, 106) on the substrate for receiving the respective surface waves after their passage through the respective active surfaces (10, 110).

9. Device for high-sensitivity resolution detection of an external variable according to claim 8, in which the variable areas of the respective locally-changing frequency-determining finger intervals (8) of at least two generating devices do not have common values.

10. Device for high-sensitivity resolution detection of an external variable according to claim 1, with a radio receiving device for receiving a radio frequency for frequency-dependent input into at least one generating device (4, 104) and a second device for emitting a frequency signal dependent on the signal received from the receiving device (6, 106) for receiving surface waves (1, 101) after their passage through the active surface (10, 110),

in such manner that the device can be radio-scanned.

12. Spectrometer arrangement with a component for wavelength-dependent deflection of a light beam and a device for high-sensitivity resolution detection according to claim 1 for detection of the light beam deflection direction.

13. Imaging device with a device according to claim 1, and an evaluation device for converting the output signal of the device into an image of the active surface (10, 110) under the influence of the external variable by means of image processing methods.

17. Method for high-sensitivity resolution detection of an external variable according to claim 14, in which the external variable is transmitted by means of local stresses in the substrate.

18. Method for high-sensitivity resolution detection of an external variable according to claim 14, in which the surface wave (1, 101) phase altered by interaction with the external variable is evaluated by the frequency in each case.
19. Method for high-sensitivity resolution detection of an external variable according to claim 14, in which the change in intensity of the surface wave through the interaction with the external variable at the frequency in each case is evaluated.
20. Method for high-sensitivity resolution detection of an external variable according to claim 14, in which the change in the lag time of the surface wave (1, 101) through the interaction with the external variable at the frequency in each case is evaluated.
21. Method for high-sensitivity resolution detection of an external variable according to claim 14, in which the input frequency during a measuring cycle is changed in such a manner that the active surface (10, 110) of the substrate is covered through the change in input frequency.
22. Method according to claim 14, in which surface waves (1, 101) from a variety of directions are passed through the active area (10, 110).
24. Method for high-sensitivity resolution detection of an external variable according to claim 22, in which the measured signals are evaluated with tomographic image processing methods.
25. Method for high-sensitivity resolution detection of an external variable according to claim 14, in which the acoustic surface waves (1, 101) are generated through beaming of a radio frequency into an antenna connected with at least one generating device (4, 104) for generating the acoustic surface (1, 101), and

the acoustic surface waves (1, 101) are received by a receiving device (6, 106) which includes a transmitter that emits a frequency signal, so that the high-sensitivity resolution detection can be scanned wirelessly.

28. Method for high-sensitivity resolution detection of an external variable, in which acoustic surface waves (1, 101) are sent in at least one direction through an active area (10, 110) of a substrate and are detected, whereupon surface waves of various frequencies pass through other areas of the active surface (10, 110),

at least one part of the active surface (10, 110) is caused to interact locally with the external variable, and

a change of parameters of the surface waves (1, 101) is detected through this interaction,

with a device for high-sensitivity resolution detection of an external variable with a substrate, of

at least one generating device (4, 104) on the substrate for generating acoustic surface waves by application of an input frequency,

at least one active surface (10, 110) that can be covered with acoustic surface waves by means of at least one generating device (4, 104) for interaction with an external variable,

at least one receiving device (6, 106) on the substrate to receive the surface waves after their passage through the active surface (10, 110),

where the at least one generating device (4, 104) designed in such manner that the propagation range of the surface waves in question (1, 101) within the respective active surface (10, 110) changes with the height of the input frequency.